Outcomes for frail very old patients in the ICU are remarkably good

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... but how are we deciding which patients are selected for ICU referral and admission?

Frailty reflects reduced physiological reserve and consequently increased vulnerability to physiological stressors.[1] Frailty can provide valuable prognostic information, independent of age, regarding patients in acute and critical care,[2,3] and the concept can be useful when explaining to clinical staff who are not geriatric specialists, as well as to patients and their families, why some older patients are likely to fare less well than others.[4] Such prognostic information may be particularly pertinent for decisions about invasive or burdensome treatments, such as intensive care, and when deciding whether meaningful health benefits are likely to accrue that justify the physical, emotional, and resource costs of therapy.

In this issue of the *MJA*, Darvall and colleagues report assessing the impact of frailty on outcomes for very old patients admitted to intensive care units (ICUs) in Australia and New Zealand.[5] In their observational study, they analysed data from an established registry that captures 80% of ICU admissions in the two countries. During 2017–18, the registry began assessing the frailty of patients at the time of their ICU admission with the Clinical Frailty Scale (CFS),[6] based on information extracted by data collectors from the patients' medical records. Although record-derived assessment is the not gold standard for determining frailty, this approach has been validated; further, the CFS can be reliably employed without specific training and has been widely used in ICU studies, providing valuable comparative data.[3]

The study by Darvall and his co-authors largely confirmed earlier findings.[3] Frailty (defined as a CFS score greater than 4) was common; identified in 40% of very old ICU inpatients, it was an independent risk factor, after applying robust risk adjustment, for death in hospital and discharge to new nursing home care. Interestingly, the risk inflation associated with frailty in this group of very old patients was similar to that associated with frailty in general ICU populations,[3] which suggests that its impact on outcomes is no greater in the very old than in other ICU patients.

The most important and surprising finding by Darvall and colleagues was that outcomes for very old, critically ill patients were remarkably good: 88% survived to hospital discharge, and 55% returned to their usual home after acute hospitalisation. A further 28% were transferred for rehabilitation or convalescent care, including some who may not have subsequently returned home, but only 4% were discharged directly to new nursing home care. Even 91% of very frail older patients survived intensive care and 82% survived to hospital discharge, while fewer than 5% were discharged to new nursing home care. This means that almost 5000 of the estimated 9000 frail very old people admitted to our ICUs each year return home from acute care, and 2500 receive rehabilitation or convalescent care. Frailty by no means implies futility,[7] although Darvall and his co-authors did not evaluate important patient outcomes in survivors, such as function and quality of life.

The patients in this study were, of course, a carefully selected group, having already passed through the dual sieve of referral and acceptance for ICU admission. Accordingly, the reported results may not reflect outcomes for all older inpatients with critical illnesses. Perhaps more interesting questions are how the referring and accepting clinicians are making choices in a resource-limited system, how frail patients and their families are involved in these choices, and what the outcomes are for frail patients who remain (through their own choice or their doctors' decision) on the wards. A recent multi-site study of adult ward patients of all ages for whom rapid response teams had been activated found that 40% had CFS scores of 4 or more, that ICU admission was much less likely for frail patients despite indicators of greater severity, and that 40% of frail patients had died within 30 days of the rapid response event.[8]

Greater severity of disease in frail patients was also noted by Darvall and colleagues.[5] While this might reflect less resilience than other patients in the face of similar insults, it may be that frail patients must be more clearly "failing" before they are referred to or accepted for treatment in an ICU. This situation may be related to existing treatment limitations, poor recognition of disease severity in frail older people, or institutionalised ageism.[9] It has been reported that definitive decision making regarding older and frailer patients in trauma settings is slower than for other patients, and that they are disproportionately harmed by such delays.[10]

The study by Darvall and his co-authors provides reassurance for Australian and New Zealand ICUs that their decision making and care provides good short term outcomes for most critically ill, very old patients, including those who are frail. Documenting frailty may be important for decisions affecting these patients.[11] However, important questions remain regarding how the frailty of a patient

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does and should drive decisions about ICU referral and acceptance, particularly of older people, given the positive outcomes reported in this article. Good survival also imposes a responsibility to systematically measure outcomes important to these survivors, ensuring that clinical discussions are consistent with the goals of the individual patient.

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1 Clegg A, Young J, Iliffe S, et al. Frailty in elderly people. *Lancet* 2013; 381: 752–762.

2 Theou O, Squires E, Mallery K, et al. What do we know about frailty in the acute care setting? A scoping review. *BMC Geriatr* 2018; 18: 139.

3 Muscadere J, Waters B, Varambally A, et al. The impact of frailty on intensive care unit outcomes: a systematic review and meta-analysis. *Intensive Care Med* 2017; 43: 1105–1122.

4 Cantley P. The paper boat. *British Geriatric Society*; 9 July 2018. https://www.bgs.org.uk/blog/the-paper-boat (viewed Aug 2019).

5 Darvall JN, Bellomo R, Paul E, et al. Frailty in very old critically ill patients in Australia and New Zealand: a population-based cohort study. *Med J Aust* 2019; 211: 318–323.

6 Bagshaw M, Majumdar SR, Rolfson DB, et al. A prospective multicenter cohort study of frailty in younger critically ill patients. *Crit Care* 2016; 20: 175.

7 Wilkinson DJ, Savulescu J. Knowing when to stop: futility in the intensive care unit. *Curr Opin Anaesthesiol* 2011; 24: 160–165.

8 So RKL, Bannard-Smith J, Subbe CP, et al; METHOD study investigators. The association of clinical frailty with outcomes of patients reviewed by rapid response teams: an international prospective observational cohort study. *Crit Care* 2018; 22: 227.

9 Mudge AM, Hubbard RE. Frailty: mind the gap. *Age Ageing* 2018; 47: 508–511.

10 Søreide K, Desserud KF. Emergency surgery in the elderly: the balance between function, frailty, fatality and futility. *Scand J Trauma Resusc Emerg Med* 2015; 23: 10.

11 Khatry K, Peel NM, Gray LC, Hubbard RE. The utility of the Frailty Index in clinical decision making. *J Frailty Aging* 2018; 7: 138–141. ■